



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,241	12/01/2003	Xiang-Dong Mi	86914KNM	1951

7590
Paul A. Leipold
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

04/17/2007

EXAMINER

CHOW, DOON Y

ART UNIT	PAPER NUMBER
----------	--------------

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/725,241	Applicant(s) MI ET AL.	
	Examiner Dennis-Doon Chow	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-35 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 16-22, and 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (2002/0005827).

Regarding to claims 1 and 26, Kobayashi discloses an apparatus and a method for writing an image on a liquid crystal display of the type having a layer of cholesteric liquid crystal material ([0008]) disposed between a pair of unpatterned conductors (see Fig. 4) and a light absorbing layer (52 and 50, Fig. 4) for forming an image wise pattern in response to an image wise pattern of light, comprising: means for applying a first voltage to the conductors (Figs. 1 and 2; [0068] to [0073]); means for applying a second voltage different from the first voltage to the conductors after applying the first voltage, wherein the first and second voltages are non-zero (Figs. 1 and 2; [0068] to [0073]); and means for exposing the liquid crystal display to the image wise pattern of light ([0043]). Kobayashi does not explicitly disclose the wise pattern is a wise thermal pattern. However, Kobayashi discloses forming the image wise pattern in response to an image wise pattern of light. Since the light is generated from a light source (26, Fig.

Art Unit: 2629

8) which generates heat at the time, it would have been obvious to one of ordinary skill in the art that the image wise pattern is an image wise thermal pattern.

Kobayashi does not disclose the applied voltages being RMS voltages. However, the examiner takes Official Notice that applying RMS voltages to a liquid crystal display is old and well known in the art. Thus, it would have been obvious to one of ordinary skill in the art to use RMS voltages first and second voltages in Kobayashi's apparatus because the RMS voltages allow the display to generate acute images.

Regarding to claims 2-4 and 27, Kobayashi further discloses exposing the liquid crystal display the image wise pattern of light prior the application of the first voltage, during the application of the first voltage, and during the application of the second voltage ([0076] to [0087]).

Regarding to claims 5 and 28, Kobayashi further discloses the second voltage is higher than the first voltage (Figs. 1 and 2; [0068] to [0073]).

Regarding to claims 6 and 29, wherein the first voltage is effective to drive the cholesteric liquid crystal material which inherently comprises a focal conic state.

Regarding claim 16, Kobayashi further discloses the duration of the second voltages less than 2 milliseconds ([0080]).

Regarding to claims 17-19, and 30-32, Kobayashi further discloses a liquid crystal masking device (24, Fig. 8) and a flash lamp (26, Fig. 8). The masking device is electrically controlled by a control unit (14, Fig. 8) to define the image wise pattern of light.

Regarding to claims 20 and 33, Kobayashi further discloses the cholesteric liquid crystal layer is a polymer dispersed layer ([0008], [0128]).

Regarding to claims 21 and 34, Kobayashi does not explicitly disclose the polymer is gelatin. However, it is well known in the art to use a gelatin polymer as the polymer dispersed layer. Thus, it would have been obvious to one of ordinary skill in the art to use the known gelatin polymer as the polymer dispersed layer in Kobayashi's apparatus because this is how a cholesteric liquid crystal layer is formed.

Regarding to claims 22 and 35, Kobayashi further discloses the first and second voltages are generated by bipolar waveforms that have the same amplitudes and different duty cycles (Figs. 1 and 2).

3. Claims 7-10 12-15 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as applied to claims 1-6, 16-22, and 26-35 above, and further in view of Yang et al. (6154190).

Kobayashi does not disclose a third, fourth, and fifth voltages.

Yang, in the same display field, discloses an apparatus and a method for writing an image on a liquid crystal display comprising a third, fourth, and fifth voltages (see Figs. 5-6, 11, 14-15, 19). Each of the voltages is different from each other.

In light of Yang, it would have been obvious to one of ordinary skill in the art to use Yang's voltages in Kobayashi's apparatus for writing an image on the liquid crystal display. This would have been obvious because it allows the apparatus to generate different image signals.

Allowable Subject Matter

4. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claim 36 is allowed.

Response to Arguments

6. Applicant's arguments filed 1/29/07 have been fully considered but they are not persuasive.

Applicant argues that Kobayashi fails to disclose suggest the required application of multiple differing voltages or light absorbing layer for forming a specifically thermal pattern. The examiner disagrees with applicant's arguments because Figs 1A-1E Kobayashi clearly show that different voltages are applied to the conductors. Obviously, there must been more than one voltages are applies the conductors of Kobayashi's display. As to the light-absorbing layer for forming a specifically thermal pattern, Kobayashi discloses forming the image wise pattern in response to an image wise pattern of light. Since the light is generated from a light source (26, Fig. 8) which generates heat at the time, it would have been obvious to one of ordinary skill in the art that the image wise pattern is an image wise thermal pattern.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis-Don Chow whose telephone number is 571-272-7767. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Summate Jerkewitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Dennis-Don Chow
Primary Examiner
Art Unit 2629

D. Chow
September 25, 2006